

U.S. Application No. 09/630,435 – Filed: August 1, 2000

Amendment Dated: May 11, 2004

Reply to Office Action Dated: February 13, 2004

Amendments to the Drawings:

The attached thirty-one (31) sheets of formal drawings are being submitted to replace the informal drawings currently on file, and contain no new subject matter.

The Specification has been amended to include reference sign(s): “425” of Figure 19 to comply with 37 CFR 1.84(p)(5). Accordingly, no change is required in the original drawing Figure 19.

Attachment: Thirty-one (31) Replacement Sheets (FIGS. 1-5, 6a – 6c, 7a – 7c, 8-19, 20a, 20b, 21-1, 21,2, 21-3, 21-4, 21-5, 21-6, 22, 23a – 23c and 24).

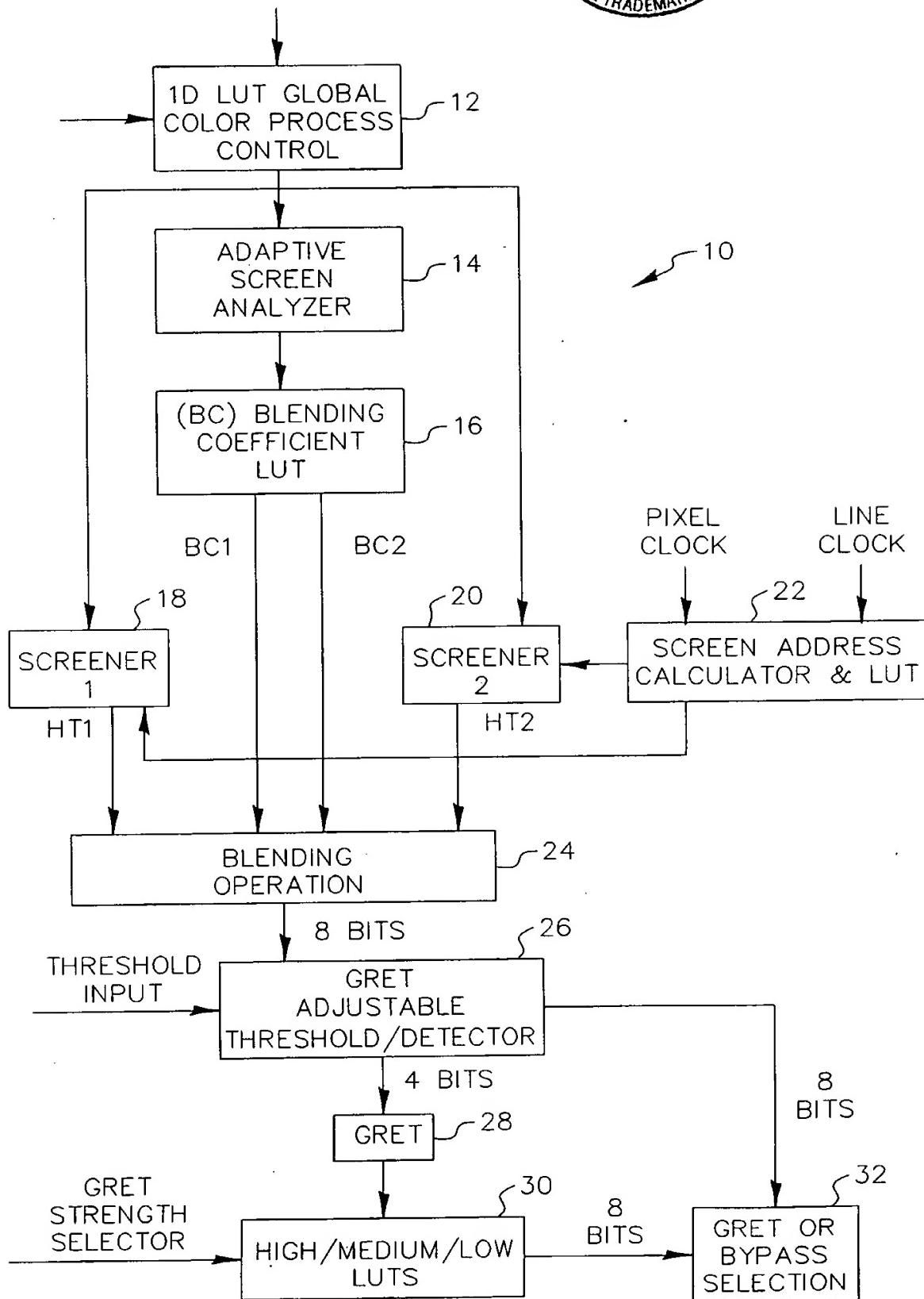


FIG. 1

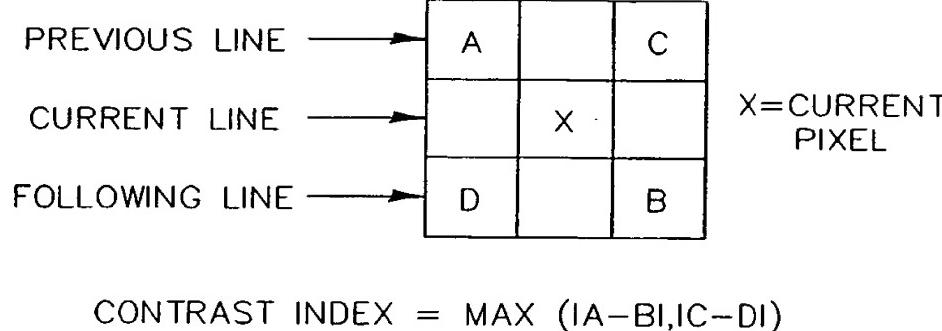
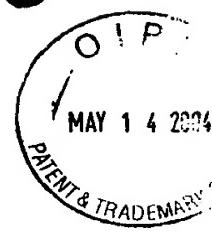


FIG. 2

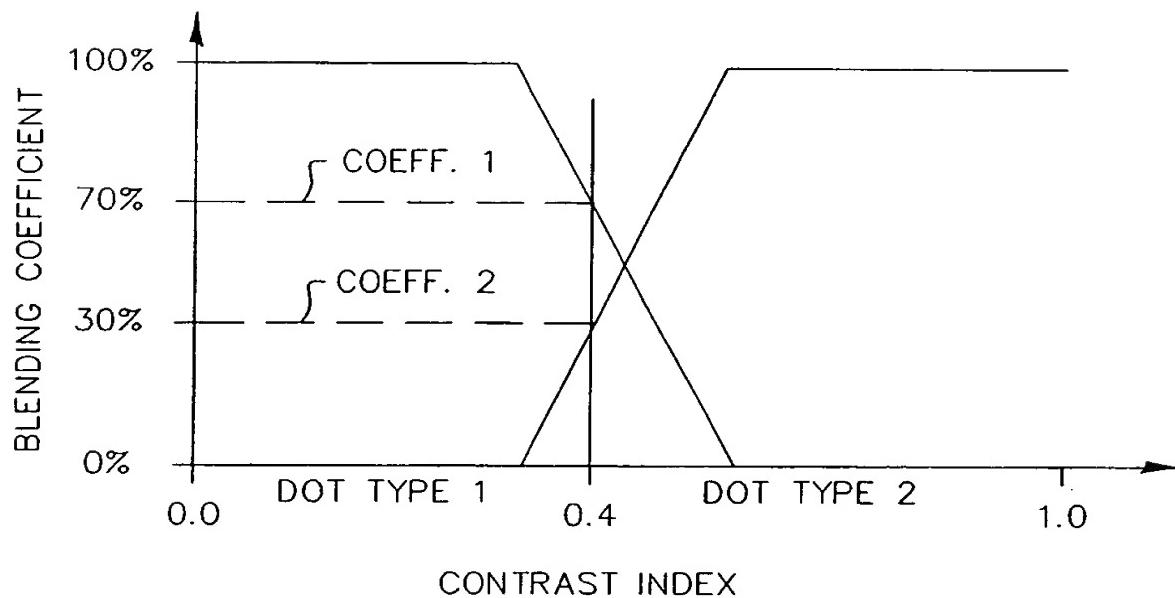


FIG. 3

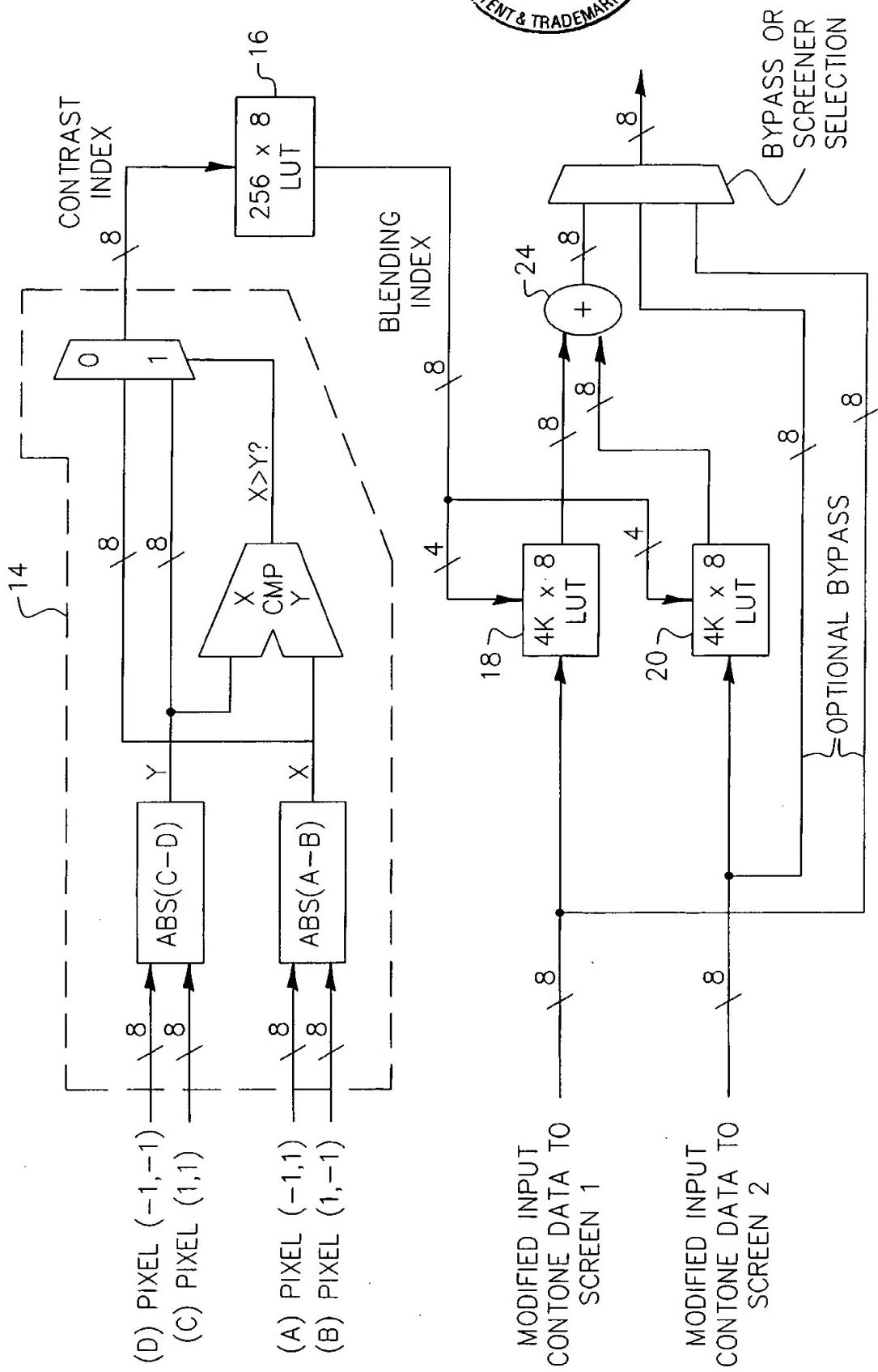


FIG. 4

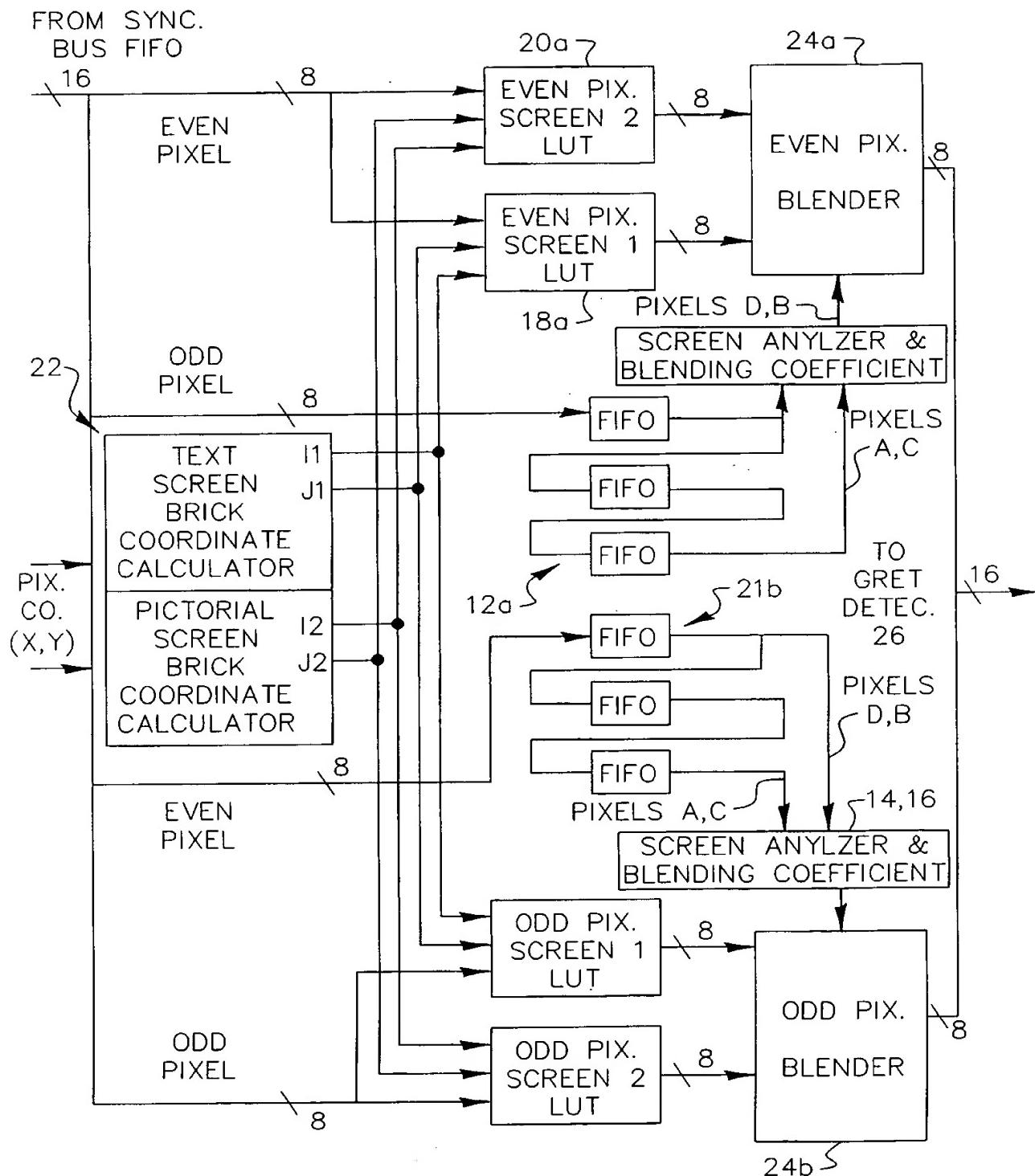


FIG. 5

PLANE=255

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
5	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
6	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
7	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
8	0	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
9	0	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
10	0	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
11	0	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
12	0	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
13	0	0	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
14	0	0	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
15	0	0	0	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
16	0	0	0	0	0	255	255	255	255	255	255	255	255	255	255	255	255	255	255
17	0	0	0	0	0	0	255	255	255	255	255	255	255	255	255	255	255	255	255
18	0	0	0	0	0	0	0	255	255	255	255	255	255	255	255	255	255	255	255

FIG. 6a



PLANE=128

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	32	187	83	32	163	253	228	155	40	77	233	248	187	0	0	0	0	0
5	0	117	248	241	168	182	243	181	22	27	152	70	0	13	182	163	70	0	0
6	0	166	233	219	54	13	117	116	0	0	134	194	81	117	243	253	182	0	0
7	0	0	86	156	0	0	81	212	104	86	225	255	212	116	181	228	57	0	0
8	0	0	0	40	209	132	70	194	255	235	126	157	235	104	0	22	155	48	0
9	0	0	0	155	253	248	152	134	225	164	0	0	133	86	0	27	202	204	120
10	0	0	0	120	204	202	27	0	86	133	0	0	164	225	134	152	248	253	155
11	0	0	0	0	48	155	22	0	104	235	157	126	235	255	194	70	132	209	40
12	0	0	0	0	57	228	181	116	212	255	225	86	104	212	81	0	0	156	86
13	0	0	0	0	182	253	243	117	81	194	134	0	0	116	117	13	54	219	233
14	0	0	0	0	70	163	182	13	0	70	152	27	22	181	243	182	168	241	248
15	0	0	0	0	0	32	168	54	0	132	248	202	155	228	253	163	32	83	187
16	0	0	0	0	0	83	241	219	156	209	253	204	48	57	182	70	0	0	0
17	0	0	0	0	0	187	248	233	86	40	155	120	0	0	0	0	0	0	0
18	0	0	0	0	0	32	117	166	0	0	0	0	0	0	0	0	0	0	0

FIG. 6b





PLANE=2

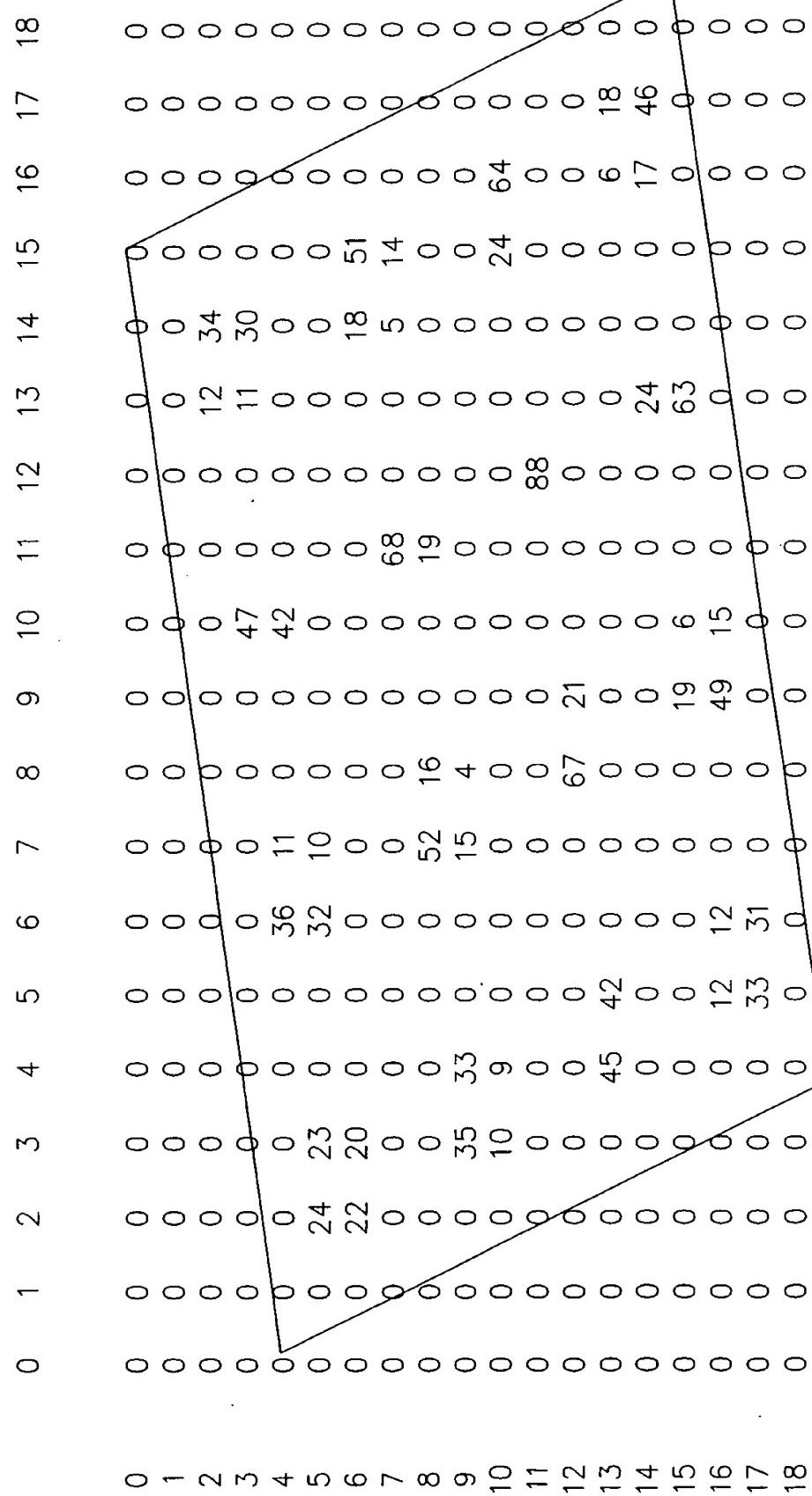


FIG. 6c

PLANE=255

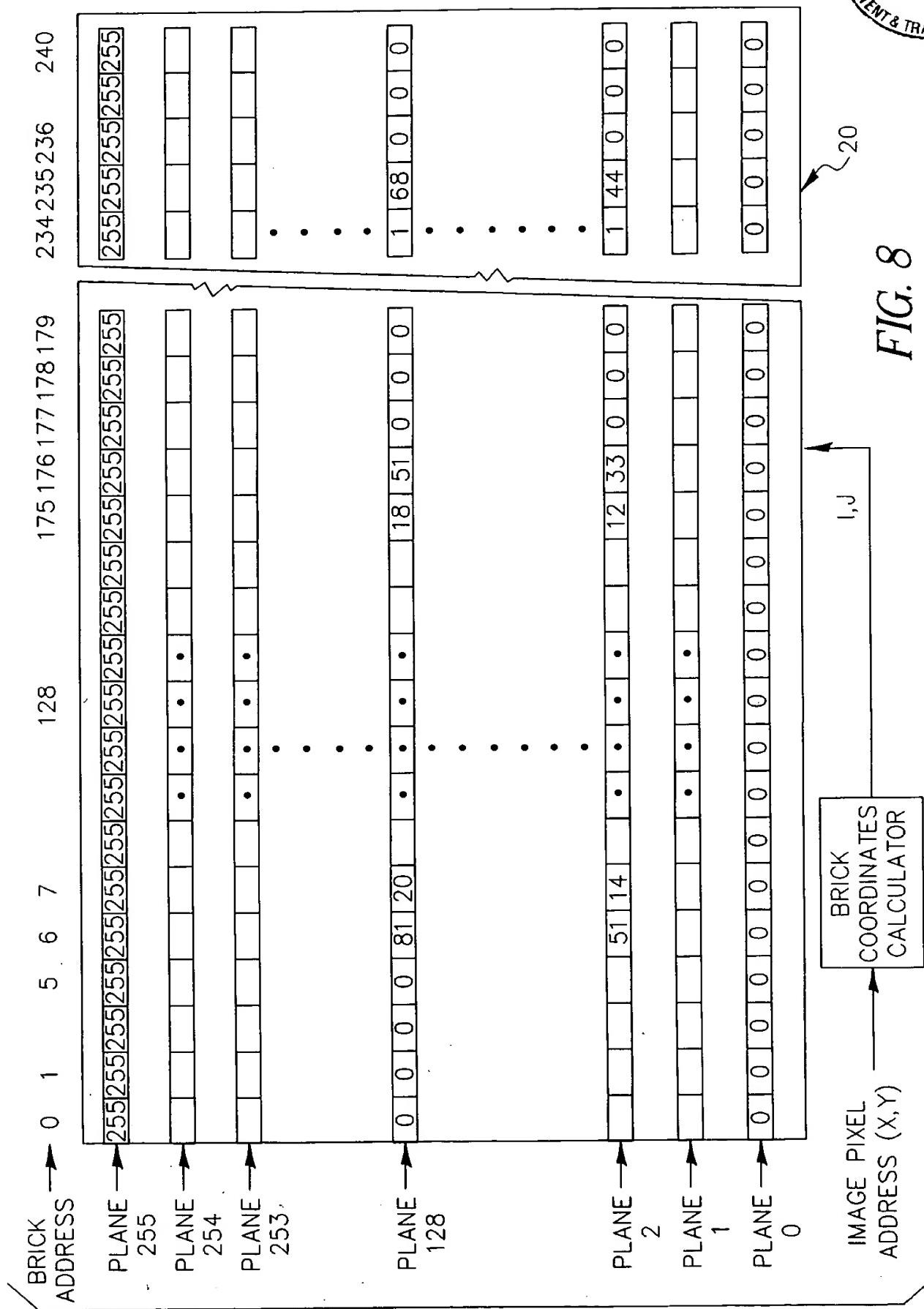
FIG. 7a

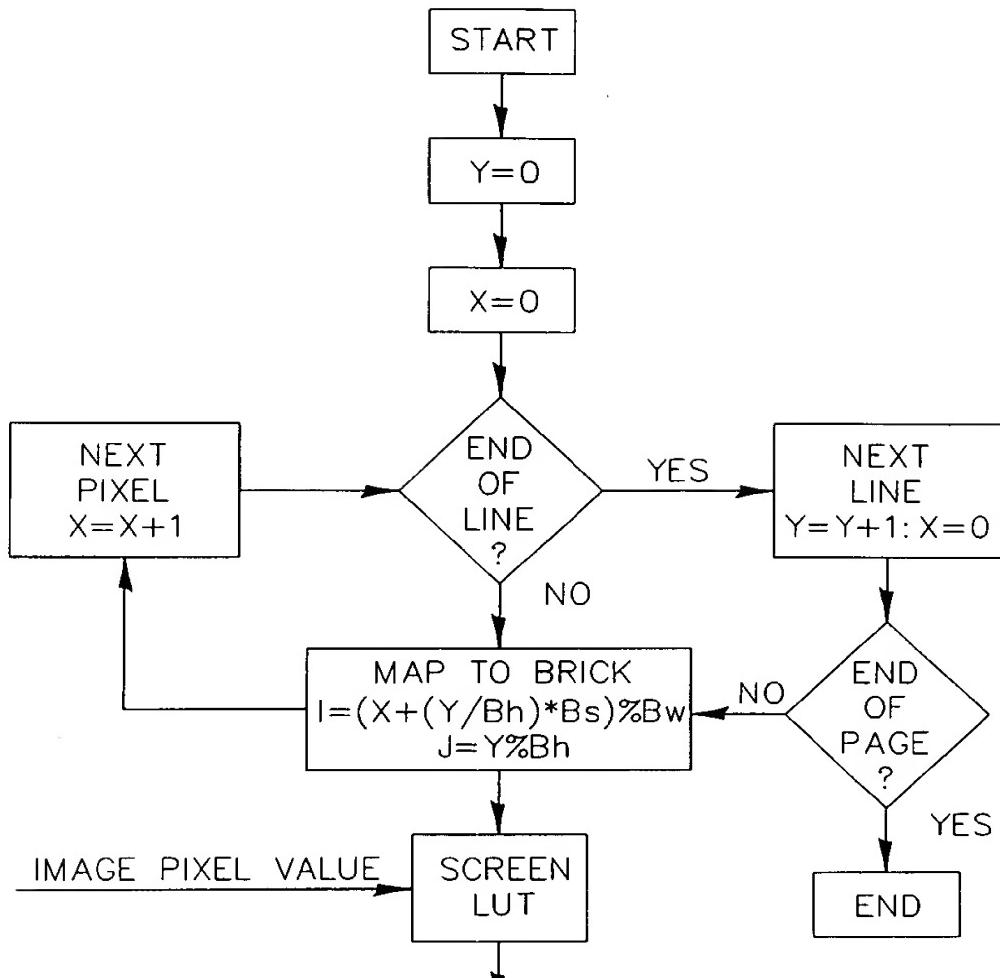


FIG. 7b



FIG. 7C





PLANE 255	255	255
	255	255
PLANE 128	127	128
	128	128
PLANE 2	1	2
	2	2

FIG. 10

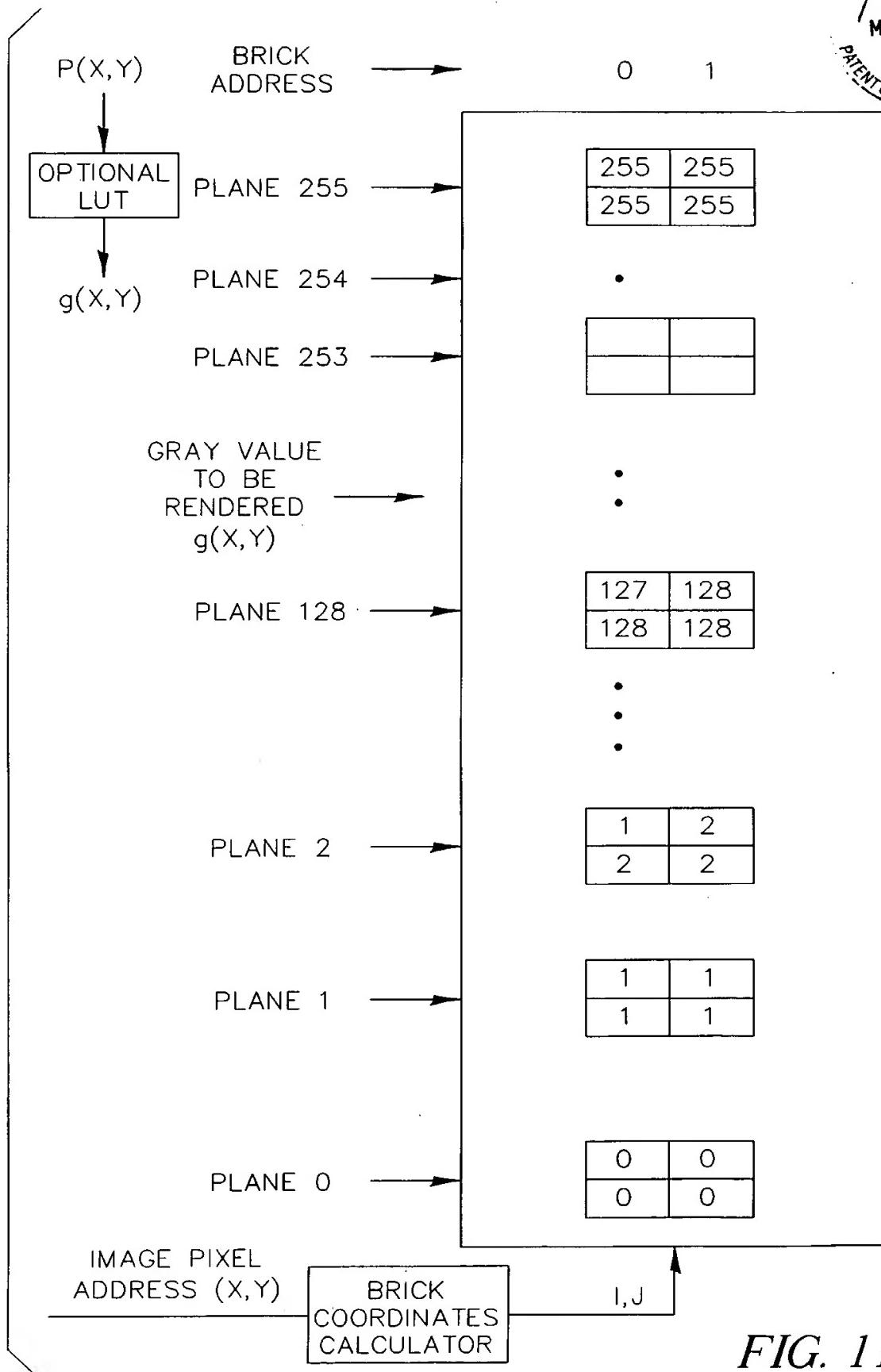


FIG. 11

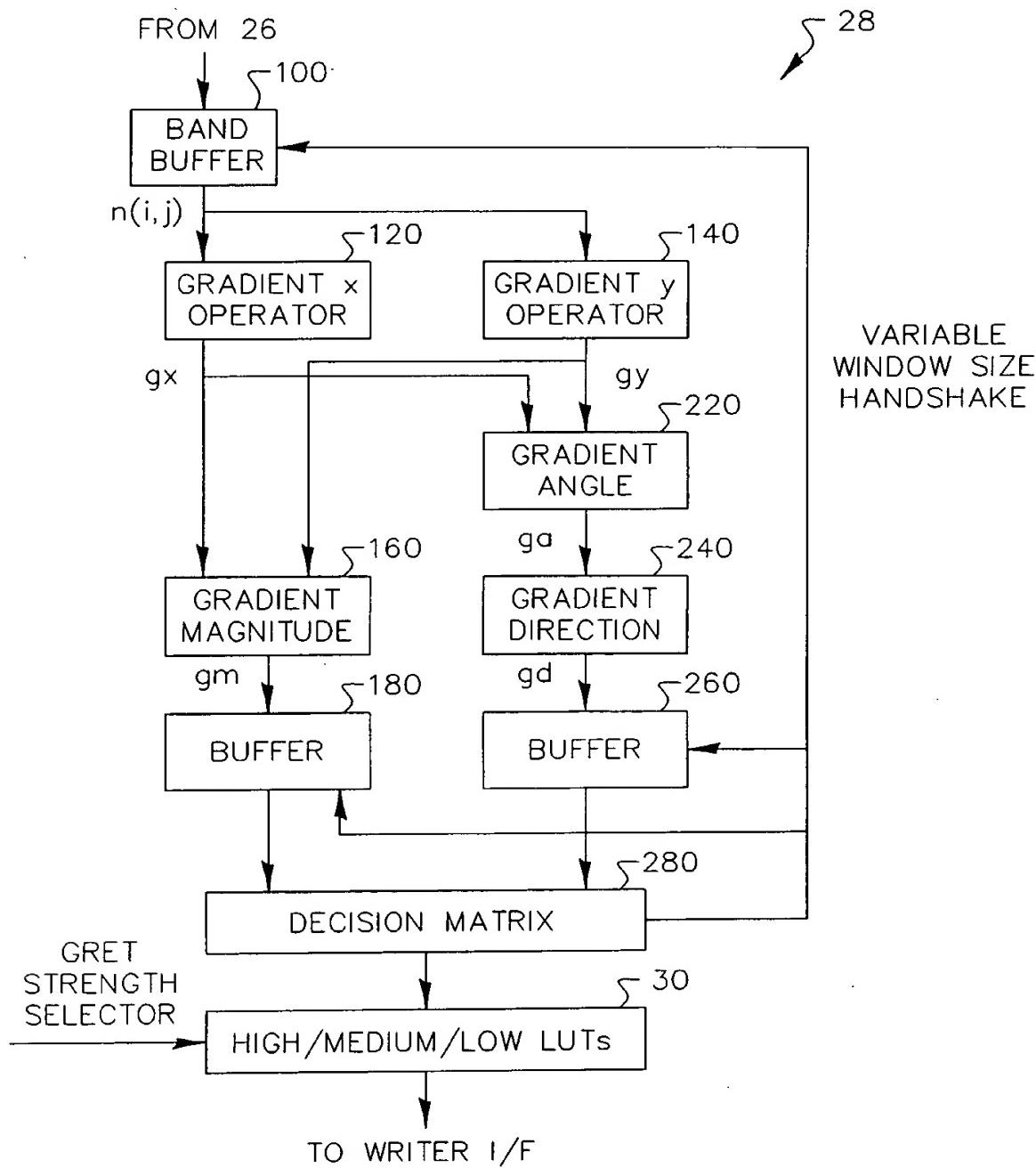


FIG. 12

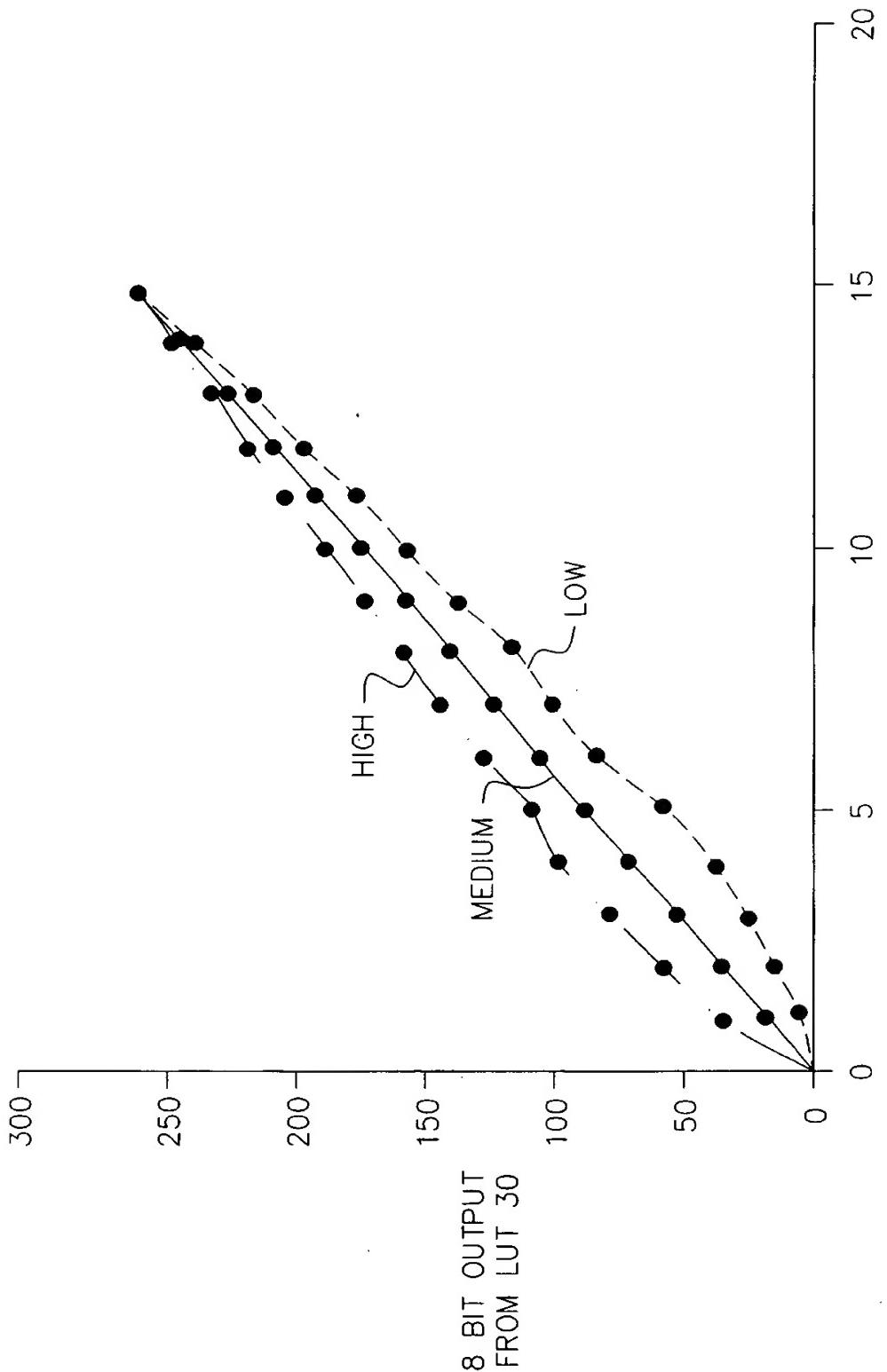


FIG. 13



MAY 14 2004

FIG. 14



MAY 14 2004

FIG. 15

FIG. 16

FIG. 17

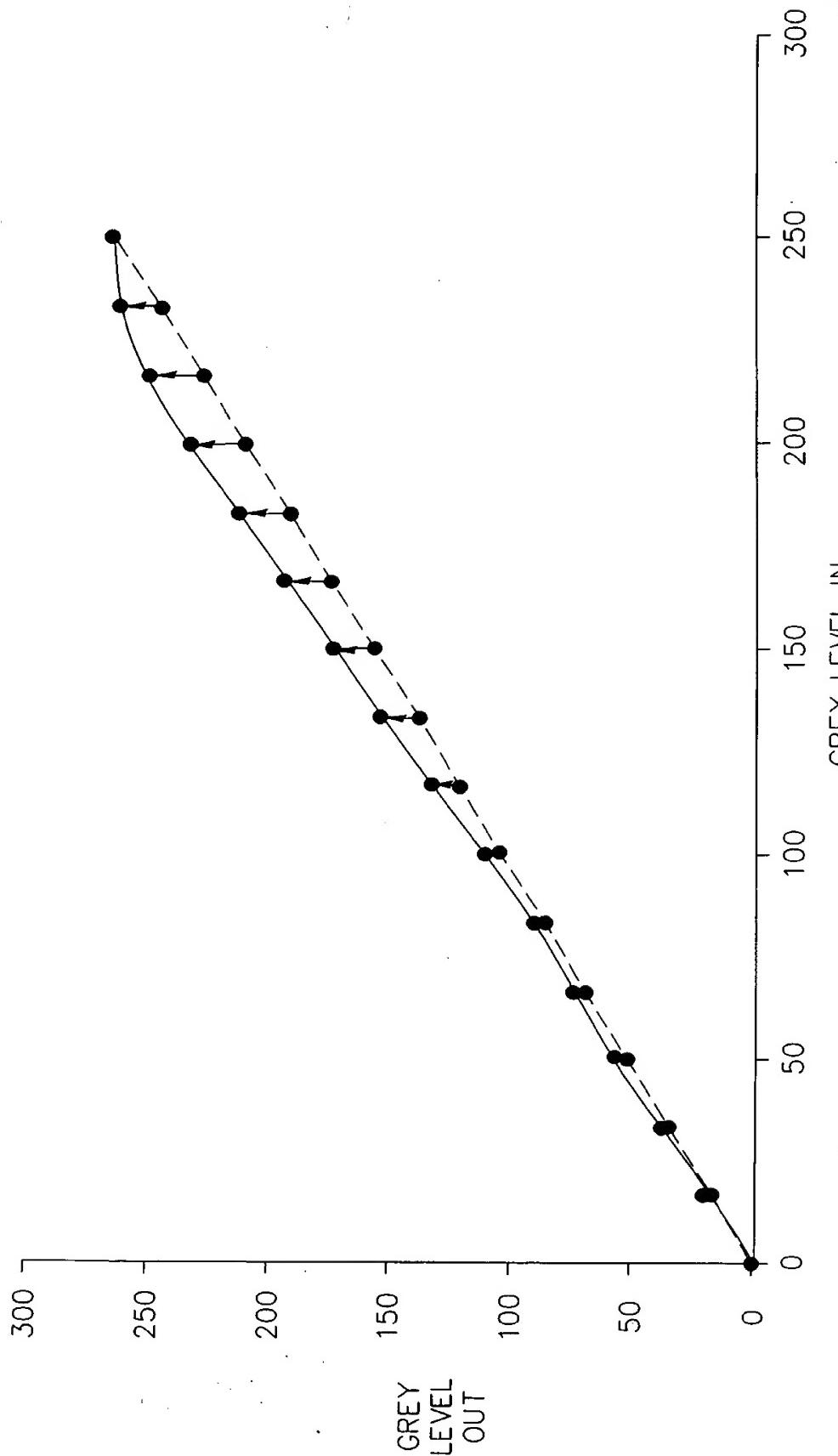


FIG. 18

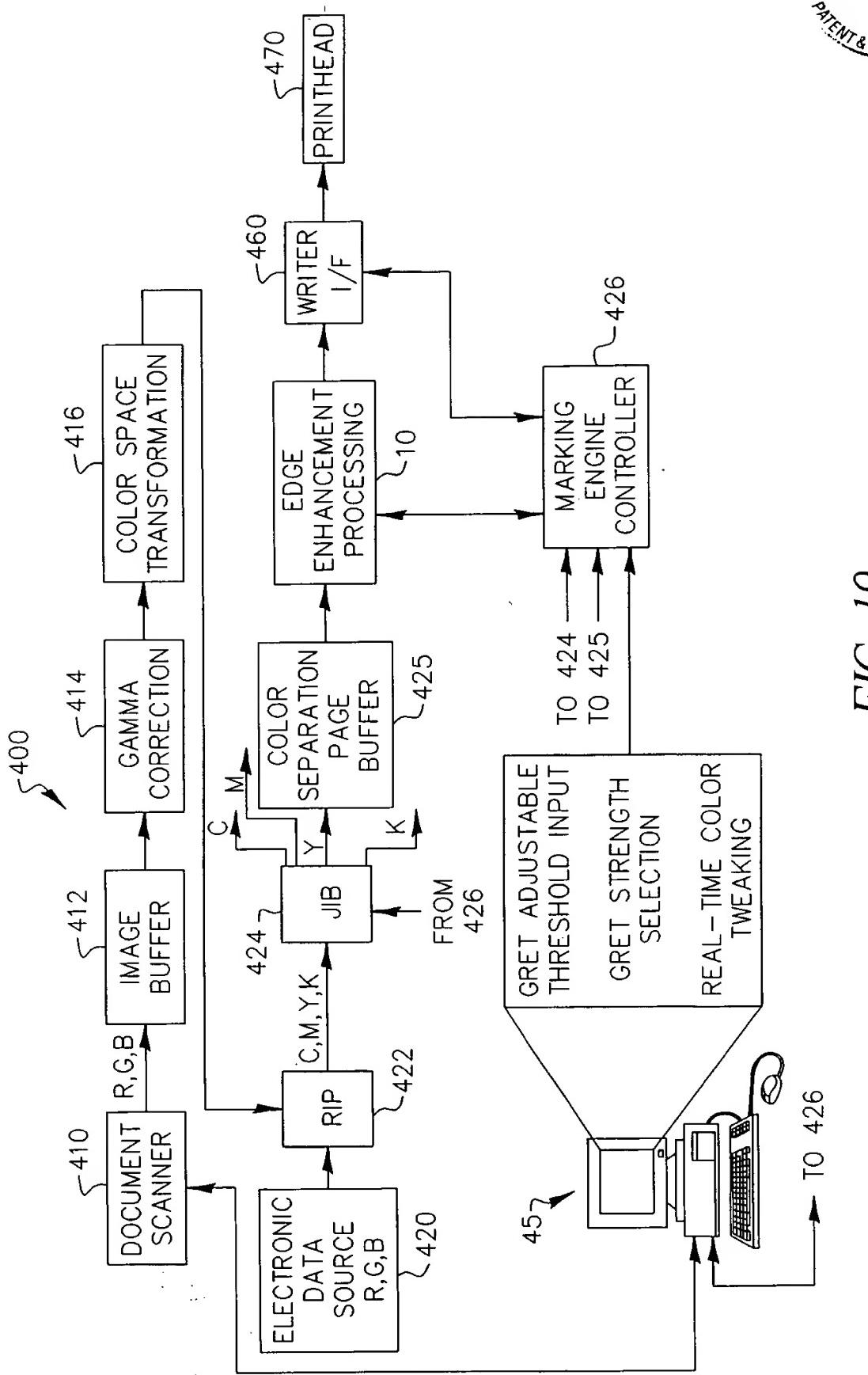
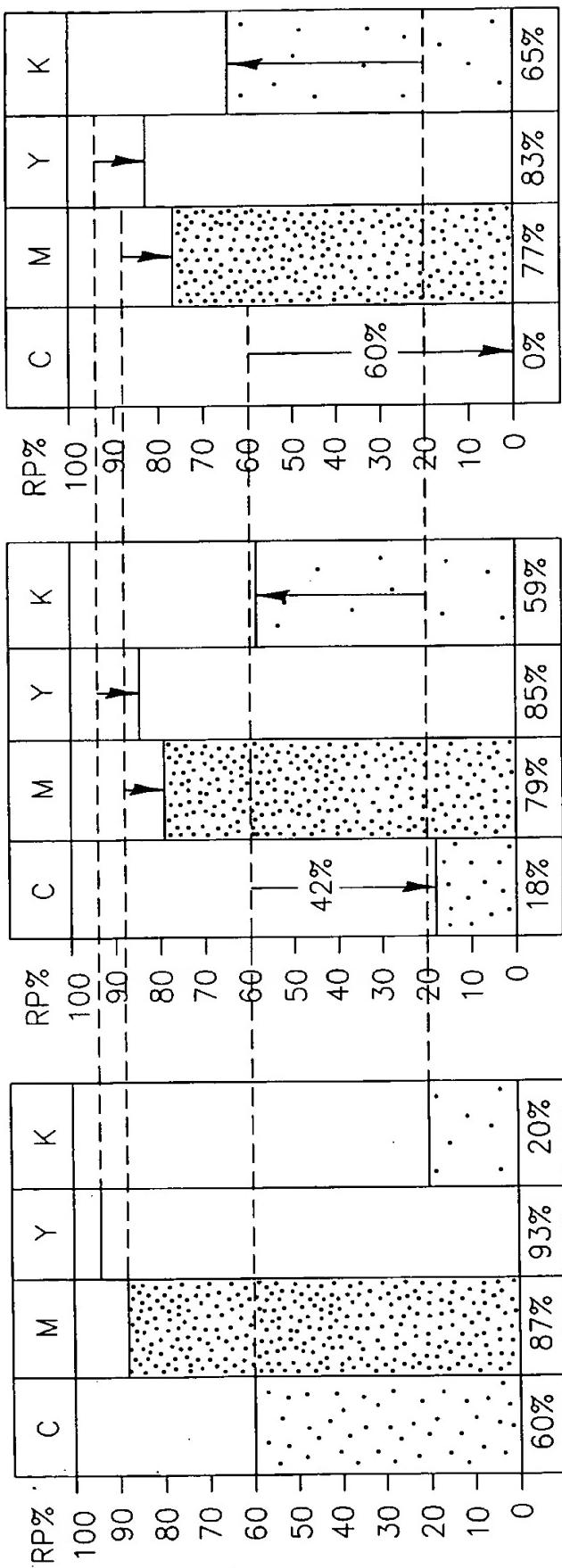


FIG. 19



CHROMATIC REPRODUCTION
WITHOUT GCR

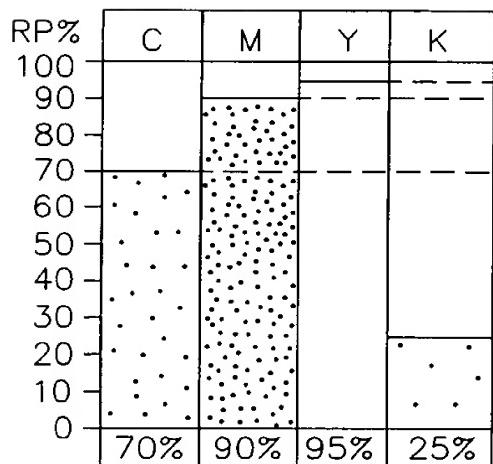
GCR WITH 70%

MAXIMUM
GCR WITH 100%

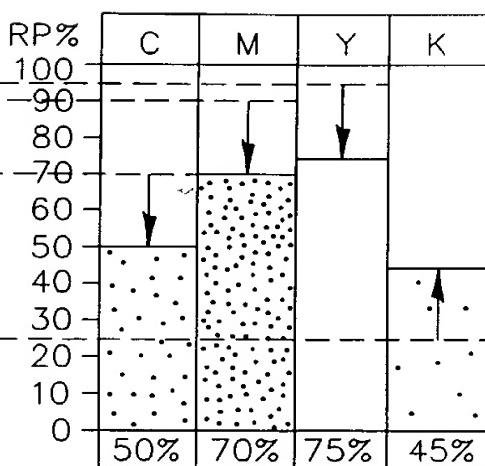
DOMINANT COLORS: Y,M=RED
COMPLEMENTARY COLOR=CYAN

FIG. 20a





CHROMATIC REPRODUCTION
WITHOUT UCR
TOTAL DOT AREA 280%



CHROMATIC REPRODUCTION
WITHOUT UCR
TOTAL DOT AREA 240%

FIG. 20b



STEP 1

TILE STRUCTURE

X	X	X	X	X	X	X
X	X	X	C1	X	X	X
X	X	C1	C1	C1	X	X
X	C1	C1	C1	C1	C1	X
X	C1	C1	C1	C1	C1	X
X	X	C1	C1	C1	X	X
X	X	X	C1	X	X	X
X	X	X	X	X	X	X

FIG. 21-1

STEP 2

LABEL PIXEL SEQUENCE
IN THE TILE

0	0	0	0	0	0	0
0	0	0	1	0	0	0
0	0	2	3	4	0	0
0	5	6	7	8	9	0
0	10	11	12	13	14	0
0	0	15	16	17	0	0
0	0	0	18	0	0	0
0	0	0	0	0	0	0

FIG. 21-2



STEP 3

FILL UP IMAGE PLANE WITH TILE

1	10	11	12	13	14	1	10	11	12	13	14	1
3	4	15	16	17	2	3	4	15	16	17	2	3
7	8	9	18	5	6	7	8	9	18	5	6	7
12	13	14	1	10	11	12	13	14	1	10	11	12
16	17	2	3	4	15	16	17	2	3	4	15	16
18	5	6	7	8	9	18	5	6	7	8	9	18
1	10	11	12	13	14	1	10	11	12	13	14	1
3	4	15	16	17	2	3	4	15	16	17	2	3
7	8	9	18	5	6	7	8	9	18	5	6	7
12	13	14	1	10	11	12	13	14	1	10	11	12
16	17	2	3	4	15	16	17	2	3	4	15	16
18	5	6	7	8	9	18	5	6	7	8	9	18
1	10	11	12	13	14	1	10	11	12	13	14	1
3	4	15	16	17	2	3	4	15	16	17	2	3
7	8	9	18	5	6	7	8	9	18	5	6	7
12	13	14	1	10	11	12	13	14	1	10	11	12
16	17	2	3	4	15	16	17	2	3	4	15	16

FIG. 21-3



STEP 4

FOUND REPEATING RECTANGLE BLOCKS IN THE IMAGE PLANE

1	10	11	12	13	14	1	10	11	12	13	14	1
3	4	15	16	17	2	3	4	15	16	17	2	3
7	8	9	18	5	6	7	8	9	18	5	6	7
12	13	14	1	10	11	12	13	14	1	10	11	12
16	17	2	3	4	15	16	17	2	3	4	15	16
18	5	6	7	8	9	18	5	6	7	8	9	18
1	10	11	12	13	14	1	10	11	12	13	14	1
3	4	15	16	17	2	3	4	15	16	17	2	3
7	8	9	18	5	6	7	8	9	18	5	6	7
12	13	14	1	10	11	12	13	14	1	10	11	12
16	17	2	3	4	15	16	17	2	3	4	15	16
18	5	6	7	8	9	18	5	6	7	8	9	18
1	10	11	12	13	14	1	10	11	12	13	14	1
3	4	15	16	17	2	3	4	15	16	17	2	3
7	8	9	18	5	6	7	8	9	18	5	6	7
12	13	14	1	10	11	12	13	14	1	10	11	12
16	17	2	3	4	15	16	17	2	3	4	15	16

FIG. 21-4

STEP 5

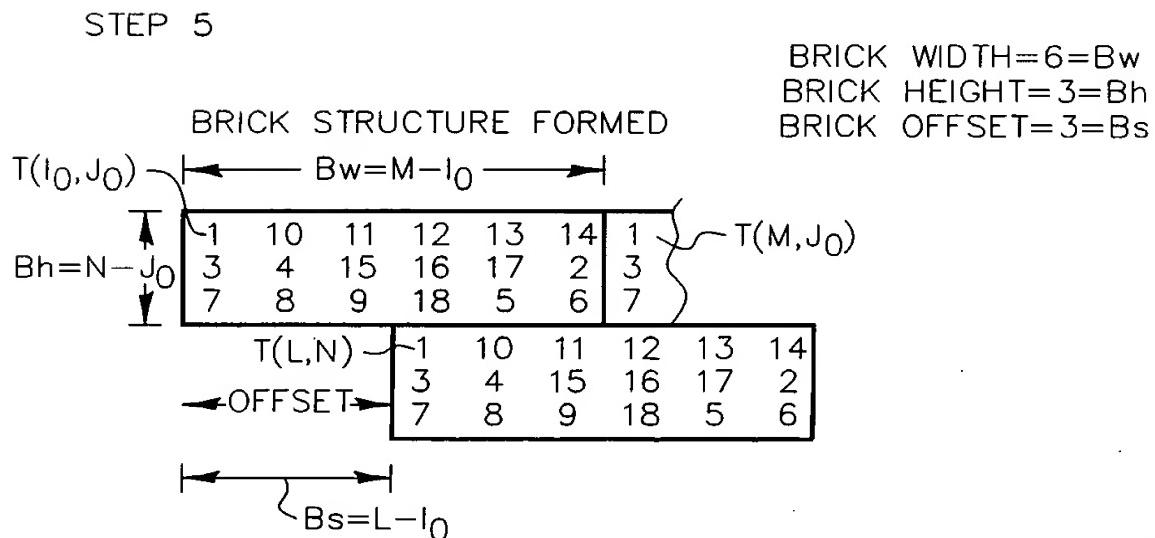


FIG. 21-5



STEP 6

LEVEL 0

CONVERTS 3-D LUT
TILE STRUCTURE TO
3-D LUT BRICK
STRUCTURE

LEVEL 2

106	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

LEVEL 128

255	231	0	0	0	231
255	231	0	0	0	231
220	99	99	220	100	100

LEVEL 255

255	255	255	255	255	255
255	255	255	255	255	255
255	255	255	255	255	255

FIG. 21-6

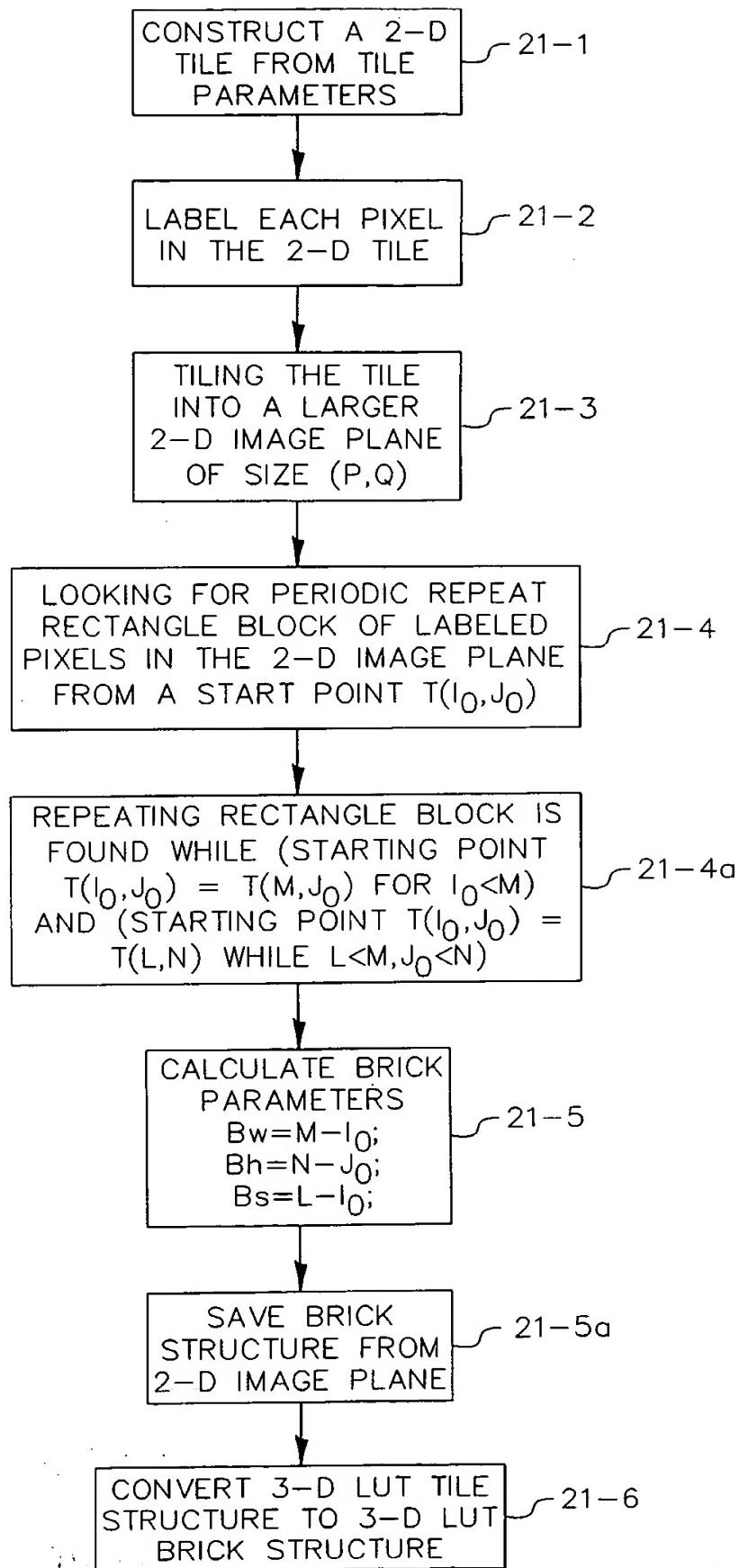


FIG. 22



GRAY LEVEL = 2

C1	C1	C1	C1	C2	C2	C2
C1	C1	C1	C1	C2	C2	C2
C1	C1	C1	C1	C2	C2	C2
C3	C3	C3	C4	C2	C2	C2
C3	C3	C3	C4	C4	C4	C4
C3	C3	C3	C4	C4	C4	C4
C3	C3	C3	C4	C4	C4	C4

S1	E1	S1	E1
S2	E2	S2	E2
S3	E3	S3	E3
S4	E4	S4	E4
S5	E5	S5	E5
S6	E6	S6	E6
S7	E7	S7	E7
S1	E1	S1	E1
S2	E2	S2	E2
S3	E3	S3	E3
S4	E4	S4	E4
S5	E5	S5	E5
S6	E6	S6	E6
S7	E7	S7	E7

FIG. 23a



GRAY LEVEL = 2

0	0	0	0	0	0	0
0	31	18	0	7	42	0
0	15	8	0	3	20	0
0	0	0	0	0	0	0
0	8	5	0	2	11	0
0	38	21	0	8	51	0
0	0	0	0	0	0	0

BRICK STRUCTURE

0	0	0	0	0	0	0
0	31	18	0	7	42	0
0	15	8	0	3	20	0
0	0	0	0	0	0	0
0	8	5	0	2	11	0
0	38	21	0	8	51	0
0	0	0	0	0	0	0

FIG. 23b



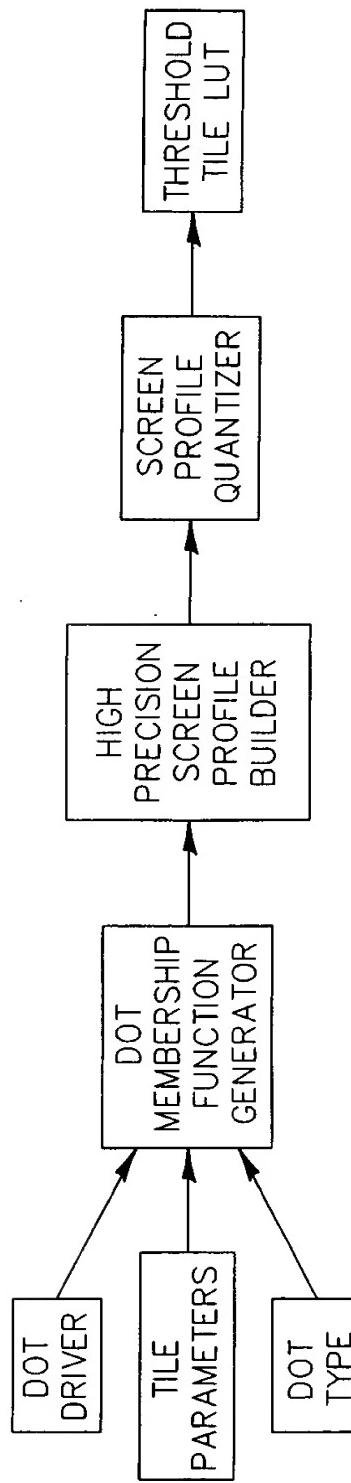
GRAY LEVEL = 128

20	164	83	5	83	164	20
164	255	229	132	223	255	164
83	229	163	51	159	233	83
5	132	51	0	51	132	5
83	223	159	51	158	224	83
164	255	233	132	224	255	164
20	164	83	5	83	164	20

BRICK STRUCTURE

20	164	83	5	83	164	20
164	255	229	132	223	255	164
83	229	163	51	159	233	83
5	132	51	0	51	132	5
83	223	159	51	158	224	83
164	255	233	132	224	255	164
20	164	83	5	83	164	20

FIG. 23c



16X16 DOT SIZE DRIVER

256	245	240	224	204	168	136	92	85	129	161	195	219	233	250	255
252	244	232	208	188	160	116	84	73	109	153	181	209	229	241	248
236	228	216	192	176	144	108	80	69	101	137	169	197	213	225	237
217	212	200	180	152	120	100	63	55	93	121	145	177	189	205	221
193	184	172	148	128	58	46	39	35	51	67	125	149	173	185	201
164	156	140	124	66	42	30	22	19	31	43	59	117	141	157	165
132	112	104	96	50	26	14	6	11	15	27	47	97	105	113	133
88	76	72	54	34	18	10	4	3	8	23	37	61	77	81	89
90	82	78	62	38	24	7	2	1	12	17	33	53	70	74	87
134	114	106	98	48	28	16	9	5	13	25	49	95	103	111	131
166	158	142	118	60	44	32	20	21	29	41	65	123	139	155	163
202	186	174	150	126	68	52	36	40	45	57	127	147	171	183	194
222	206	190	178	146	122	94	56	64	99	119	151	179	199	211	218
238	226	214	198	170	138	102	71	79	107	143	175	191	215	227	235
246	242	230	210	182	154	110	75	83	115	159	187	207	231	243	251
254	249	234	220	196	162	130	86	91	135	167	203	223	239	247	253

FIG. 24